

## **REMARKS**

Claims 1 through 14 stand rejected as being unpatentable over FIGS. 1 through 3 of the present invention in view of Hayakawa (U.S. Pat. No. 5,556,175) or Wieczorek (U.S. Pat. No. 5,704,553). Claims 1-3 and 8-10 have been cancelled. Reconsideration of the rejections is hereby solicited in view of the foregoing amendments and the following remarks.

Regarding any rejection under 35 U.S.C. § 103, it is respectfully noted that the test for patentability is whether there is some teaching or suggestion in the prior art references to support their use to reject the claimed invention. It is a basic tenet of patent law that the PTO is not permitted to ignore the results and advantages produced by claimed subject matter, of which the prior art is devoid, simply because the recited structure may be similar to that otherwise barren prior art. Further, when evaluating a claim for determining obviousness, all structural and operational interrelationships of the claim must be evaluated.

Consistent with the foregoing tenets of patent law, it is respectfully submitted that neither of claims 4 through 7 is rendered unpatentable in view of the prior art of record. In explaining the rejection of claims 4 through 7, the Office Action states that a change in shape is generally recognized as being within the level of ordinary skill in the art. It is not apparent, however, nor the Office Action explains, how or why Hayakawa's FIG. 11 or Wieczorek's circular groove 62 in FIG. 2 would have suggested the structural and/or operational relationships set forth in claims 4 through 7. More particularly, groove 62 is located in the top portion of the ball, i.e., outside the midsection of the ball, purportedly "to allow for or facilitate easier assembly of the ball 54" and thus it is respectfully submitted that the cited art, singly or in combination, fails to suggest the following structural and/or operational relationships:

a) a cylindrical section circumferentially defining a midsection of the ball, as set forth in claim 4;

- b) the cylindrical section to be bounded at opposite axial ends thereof by corresponding angled surfaces, as set forth in claim 5;
- c) the mounting section comprising a V-shaped notch, as set forth in claim 6; or
- d) the mounting section comprising a hyperboloid section to define the midsection of the ball, as set forth in claim 7.

The Office Action apparent attempt to overcome the deficiencies of the prior art by citing *In re: Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) for the broad proposition that no patentable impetus is derived from the specified shape of an article in a utility application is unsound. In *Dailey*, the court stated that “[a]ppellants have presented no argument which convinces us that the particular configuration of their container is significant or is anything more than one of numerous configurations a person of ordinary skill in the art would find obvious” (357 F.2d at 672-73, 149 USPQ at 50). In contrast, applicant’s specification (see page 5) establishes that the specific configuration of the mounting section, as recited in claims 4 through 7, allows providing greater mechanical support for applications where such a support may be required for the joint between the rod and the ball, as compared to the traditional design. Thus, each respective shape recited in claims 4 through 7 is significant in that it solves a stated problem -- namely, providing a stronger mechanical joint between the mounting section of the ball and the rod--. Under these circumstances and given the foregoing deficiencies in the prior art of record, the shape of the midsection of the ball recited in claims 4 through 7 cannot be summarily dismissed as an obvious matter of design choice. Applicant’s argument is consistent with MPEP 2144.04 that instructs Examiners not to disregard the significance of the particular configuration of the claimed invention.

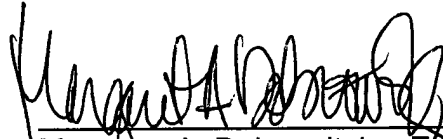
Claims 11 through 14 are each directed to a method for arranging a valve for a brake control actuator. Applicant respectfully submits that the applied prior art, as discussed above, singly or in combination, also fails to disclose or suggest the relationships respectively set forth in claims 11 through 14.

It is respectfully submitted that each of the claims pending in this application recites patentable subject matter and it is further submitted that such claims comply with all statutory requirements and thus it is earnestly solicited that each of such claims be promptly allowed.

The applicant appreciates the Examiner's efforts for conducting a thorough examination, and cordially invites the Examiner to call the undersigned attorney if there are any outstanding items that may be resolved via telephone conference.

You are hereby authorized to charge any fees due for filing this amendment to Deposit Account No. 50-0831.

Respectfully submitted,



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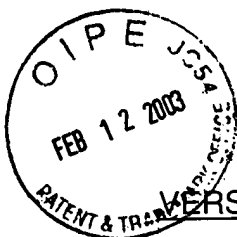
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BRENDA D. CHAMBERS



VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

4. (Once Amended) ~~The valve of claim 1~~ A valve for a brake control actuator comprising:

a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve; and

a ball affixed at one end of the rod, the ball including a sealing section that upon engagement against a ball-receiving seat in the valve blocks passage to brake fluid therethrough, the ball further including a mounting section integral with the sealing section, the mounting section configured to provide a reduced footprint relative to a spheroidal footprint and enable a strong mechanical joint between the mounting section and the rod, wherein the mounting section comprises a cylindrical section circumferentially defining a midsection of the ball.

5. (Once Amended) ~~The valve of claim 1~~ A valve for a brake control actuator comprising:

a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve; and

a ball affixed at one end of the rod, the ball including a sealing section that upon engagement against a ball-receiving seat in the valve blocks passage to brake fluid therethrough, the ball further including a mounting section integral with the sealing section, the mounting section configured to provide a reduced footprint relative to a spheroidal footprint and enable a strong mechanical joint between the mounting section and the rod, wherein the mounting section comprises a cylindrical section circumferentially defining a midsection of the ball, and wherein the cylindrical section is bounded at opposite axial ends thereof by corresponding angled surfaces.

6. (Once Amended) ~~The valve of claim 1~~ A valve for a brake control actuator comprising:

a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve; and

a ball affixed at one end of the rod, the ball including a sealing section that upon engagement against a ball-receiving seat in the valve blocks passage to brake fluid therethrough, the ball further including a mounting section integral with the sealing section, the mounting section configured to provide a reduced footprint relative to a spheroidal footprint and enable a strong mechanical joint between the mounting section and the rod, wherein the mounting section comprises a generally V-shaped notch.

7. (Once Amended) ~~The valve of claim 1~~ A valve for a brake control actuator comprising:

a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve; and

a ball affixed at one end of the rod, the ball including a sealing section that upon engagement against a ball-receiving seat in the valve blocks passage to brake fluid therethrough, the ball further including a mounting section integral with the sealing section, the mounting section configured to provide a reduced footprint relative to a spheroidal footprint and enable a strong mechanical joint between the mounting section and the rod, wherein the mounting section comprises a hyperboloid section defining a midsection of the ball.

11. (Once Amended) ~~The method of claim 8A~~ A method for arranging a valve for a brake control actuator, the valve including a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve, the method comprising:

configuring a ball affixable at one end of the rod, the ball being configured to include a sealing section, and a mounting section integral with the sealing section;

configuring the sealing section so that upon engagement against a ball-receiving seat, the sealing section blocks passage to brake fluid therethrough;

configuring the mounting section to provide a reduced footprint relative to a spheroidal footprint while enabling a strong mechanical joint between the mounting section and the rod, and wherein the mounting section is further configured as a cylindrical section circumferentially defining a midsection of the ball;

configuring the end of the rod to correspond with the mounting section of the ball; and

affixing the ball to the end of the rod.

12. (Once Amended) ~~The method of claim 8 wherein~~A method for arranging a valve for a brake control actuator, the valve including a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve, the method comprising:

configuring a ball affixable at one end of the rod, the ball being configured to include a sealing section, and a mounting section integral with the sealing section;

configuring the sealing section so that upon engagement against a ball-receiving seat, the sealing section blocks passage to brake fluid therethrough;

configuring the mounting section to provide a reduced footprint relative to a spheroidal footprint while enabling a strong mechanical joint between the mounting section and the rod, and wherein the mounting section is further configured as a cylindrical section circumferentially defining a midsection of the ball and the cylindrical section is bounded at opposite axial ends thereof by corresponding angled surfaces;

configuring the end of the rod to correspond with the mounting section of the ball; and

affixing the ball to the end of the rod.

13. (Once Amended) ~~The method of claim 8A~~ method for arranging a valve for a brake control actuator, the valve including a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve, the method comprising:

\_\_\_\_\_ configuring a ball affixable at one end of the rod, the ball being configured to include a sealing section, and a mounting section integral with the sealing section;

\_\_\_\_\_ configuring the sealing section so that upon engagement against a ball-receiving seat, the sealing section blocks passage to brake fluid therethrough;

\_\_\_\_\_ configuring the mounting section to provide a reduced footprint relative to a spheroidal footprint while enabling a strong mechanical joint between the mounting section and the rod, and wherein the mounting section is configured as a generally-V-shaped notch;

\_\_\_\_\_ configuring the end of the rod to correspond with the mounting section of the ball; and

\_\_\_\_\_ affixing the ball to the end of the rod.

14. (Once Amended) ~~The method of claim 8A~~ method for arranging a valve for a brake control actuator, the valve including a rod operable between respective operating conditions to selectively allow passage of brake fluid through the valve, the method comprising:

\_\_\_\_\_ configuring a ball affixable at one end of the rod, the ball being configured to include a sealing section, and a mounting section integral with the sealing section;

\_\_\_\_\_ configuring the sealing section so that upon engagement against a ball-receiving seat, the sealing section blocks passage to brake fluid therethrough;

\_\_\_\_\_ configuring the mounting section to provide a reduced footprint relative to a spheroidal footprint while enabling a strong mechanical joint between the mounting section and the rod, and wherein the mounting section comprises a hyperboloid section defining a midsection of the ball;



configuring the end of the rod to correspond with the mounting section of  
the ball; and  
          affixing the ball to the end of the rod.